

The Abstract

A surgical clip applier for use in closing wounds under the microscope in small blood vessels modifies a well-known clip applier system to make more steady and reliable the application of very small clips during surgery on a scale of vessel size of 2mm in external diameter and smaller. The known device is modified internally so as to be capable of receiving a flexible remote actuation device which can be a cable release such as used for a camera shutter, or which can be a flexible hydraulic or pneumatic line as a force-transmitting device. ~~The flexible device is secured into the back end of the hand-held clip applier, and thus connected it is coupled so as to cause a clip to be dispensed and engaged against tissue when the device is held in the proper position and the flexible force-transmitting device is actuated.~~ Thus, the surgeon can hold the clip applier very steadily at the site desired without contracting any intrinsic muscles while the cable release is depressed by another person, or with the surgeon's other hand, or with a foot pedal. ~~The remote actuation also makes the clip applier more useful in applying clips in nearly inaccessible places, such as through a deep hole in tissue, where the prior art device would be awkward or impossible to deploy.~~